

## LA-UR-21-27012

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Title: NM Science, Technology and Telecommunications committee: State of the Lab

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Intended for: PPT presentation

Issued: 2021-08-03 (rev.1)

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# Update from LANL

Frances Chadwick, Staff Director

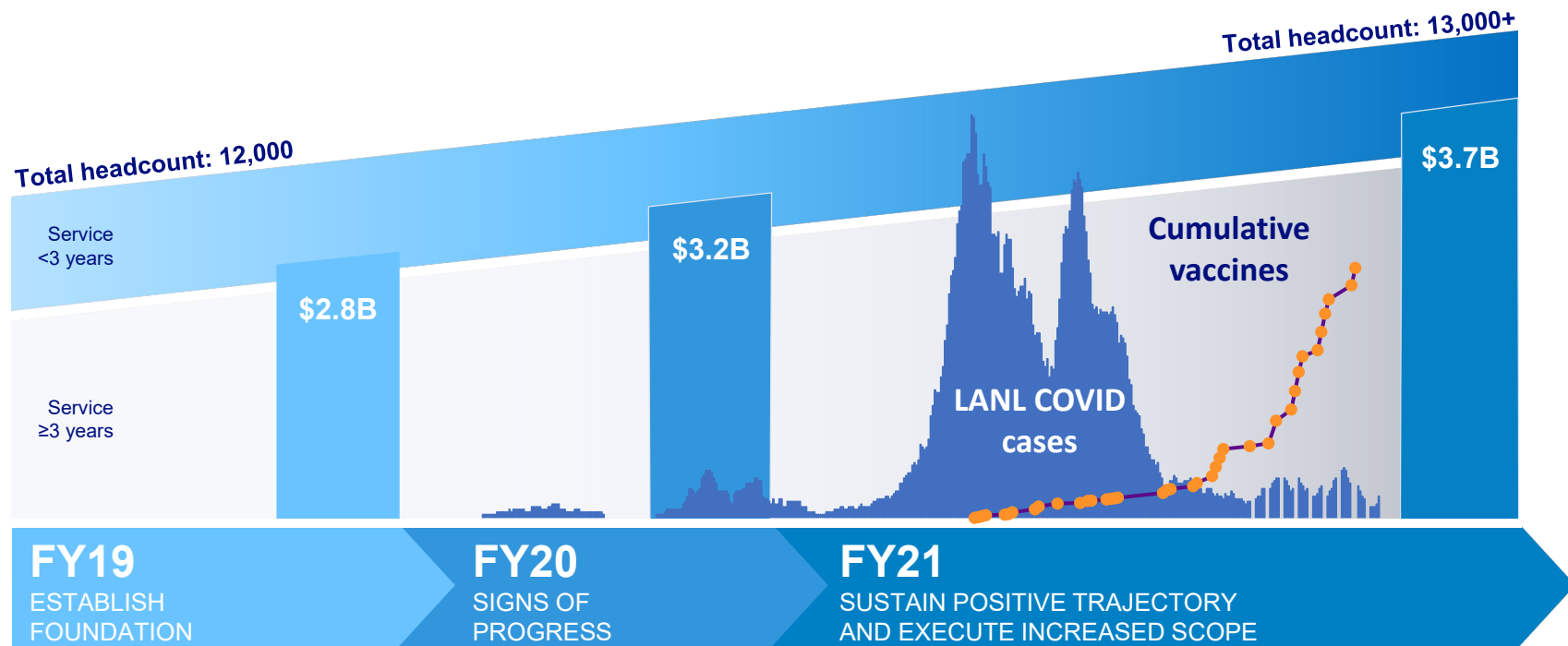
July 22, 2021



Managed by Triad National Security, LLC, for the U.S. Department of Energy's NNSA.



# Triad National Security is in its third year managing the LANL contract for the NNSA



# Our priority throughout COVID: Protecting our employees and our communities

## Actions

- Stood up internal testing, vaccination programs
- Kept disease risk low via maximum teleworking
- Leveraged world-class expertise to support federal and state through disease modeling and forecasting
- Stored vaccines for the school district

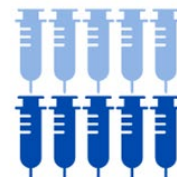
## COVID-19 taught us there are many ways to leverage technology to work safely, effectively

- “Normal” going forward is not necessarily the same environment as in early 2020
- Our tools will allow us to weather another pandemic or unexpected change in the COVID-19 situation

## LANL COVID stats



LANL employees who have received at least one shot



LANL administered 2,300 Moderna/Pfizer vaccinations per week at peak



~1,000

LANL COVID tests per week, with more than 20,000 tests to date



600

Average number of calls our 24/7 COVID Hotline staff answer per week



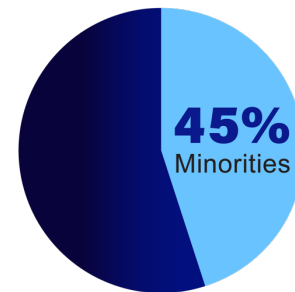
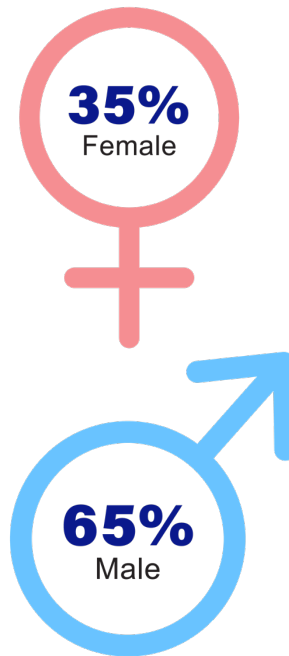
Triad truck giveaway for those fully vaccinated by Sept. 3.

# Increased hiring: Laboratory's workforce composition is changing

**13,137**  
Total Employees

**75%**  
New hires in the past year  
are from New Mexico

Pipelines with NM colleges are key



**1160**  
Craft



**1323**  
Students



**498**  
Postdocs



# For many employees, the return on-site will look very different; campus transformation is underway & reflects a changed environment



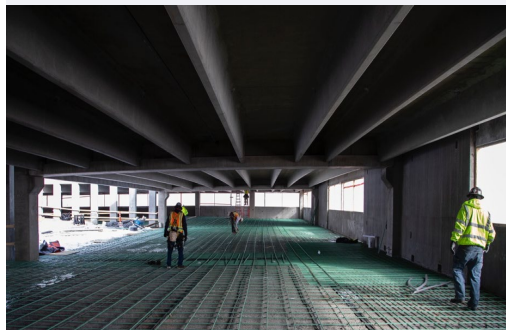
Newly converted teleworking space in Otowi. Employees are already taking advantage of these “new” spaces



New Bioscience Research Laboratory (above) and progress on parking garages at TA-03 and TA-55 (below)



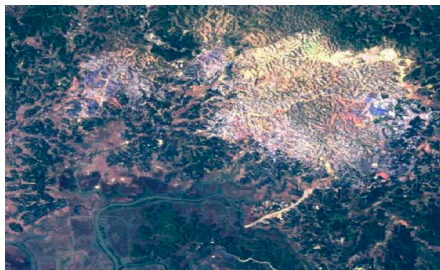
One of 3 new leases announced in 2021 (above) and a multi-use office being constructed in TA-03 in October 2020 (below)



# National and global security: Protecting against emerging, prolific, and unconventional nuclear threats and more

Leveraging the Lab's core technical capabilities to protect America against emerging, prolific, and unconventional nuclear threats, regardless of origin.

Global Security offices concentrate on nuclear nonproliferation, nuclear counterproliferation, and counter terrorism, focusing on known and emerging threats like bio, cyber, and space.



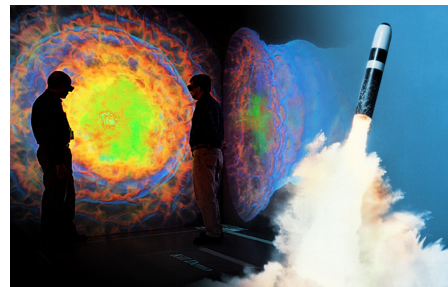
Using remote sensing techniques to understand political instability in other countries.



Nuclear nonproliferation includes monitoring nuclear materials at other sites.



Biosurveillance allows us to predict, track disease outbreaks to support public health officials.



Weapons programs ensure the safety, security, effectiveness of U.S. nuclear deterrent.



# World-class staff solves challenges on earth, in space

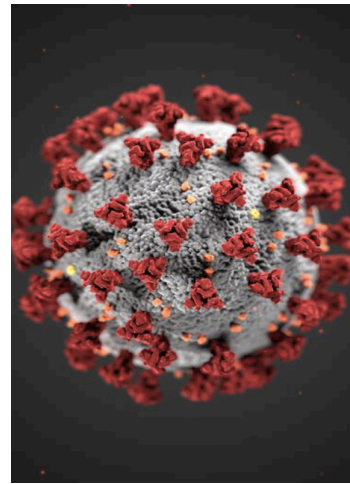
Researchers making contributions to climate change, environmental remediation, fuel cell technology

Key leaders in the pandemic, identifying mutations, predicting spread, and providing decision support

Capabilities developed in the course of LANL's stockpile research are applied to:

- Vaccines, epidemic prediction, cybersecurity

Secretary of Energy: “Science is foundational to the success of America...I respect, admire, and believe in everything you’re doing at Los Alamos.”



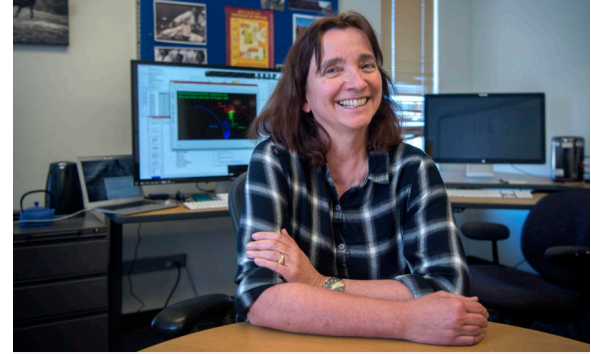
The Lab bridged the gap between R&D and operational efforts for effective pandemic response. At right, scientist Elizabeth Hunke holds an ice core.



Secretary of Energy Jennifer Granholm “visited” Los Alamos virtually in June to discuss the Lab at large and to hear presentations from leadership, others on mission programs, goals.

# COVID-19 R&D response

- **Used existing high-performance computing to create new system for COVID-19 research**
- **Used simulations to reveal how dominant SARS-CoV-2 strains bind to hosts, succumb to antibodies**
- **Used existing technologies to understand genetic understanding of COVID-19**
- **Used novel algorithms to offer a potential path toward a pan-coronavirus vaccine**
  - Shifted HIV vaccine research to SARS-CoV-2
- **Used disease forecasting and modeling to help gov't authorities make decisions on guiding and supporting COVID-related policy**
- **Used AI to tracks evolution of COVID-19 conspiracy theories on social media**



LANL's HIV database team, led by world-renowned theoretical biologist Bette Korber, pivoted to develop a real-time bioinformatics pipeline to track the evolution of the SARS Cov-2 spike protein, the target of antibody-based vaccine approaches.



Scientists Ben McMahon and Sara Del Valle led teams who played key roles in modeling the COVID-19 pandemic in NM and used mathematical models and computational simulations to evaluate scenarios for vaccine distribution.

# Operations, environmental and safety responsibilities

**LANL strives to avoid repeat events, develop sustainable fixes, and replicate best practices**

**Our environmental teams work with neighboring pueblos, counties, and other state and federal entities to**

- Preserve biological and cultural resources
- Comply with numerous environmental requirements
- Prevent pollution

**Our priority is to protect our employees, the public, and the environment**





# We can only succeed if our communities are thriving

## Develop local workforce pipelines

- UNM-LA mechanical engineering degree
- Radiation protection degree via Northern NM College
- Engineering machining degree via Santa Fe Community College

## Enhance small business opportunities

- \$486M in procurements with NM businesses in FY20
- Launched Lab-Embedded Entrepreneur Program (LEEP)

## Support educational, economic development, and philanthropic initiatives

- Triad and LANL employees were the Food Depot's biggest corporate donor in 2020
- Employees donated \$2.8M in the 2020 giving campaign; Triad donated \$2.5M
- LANL Foundation awarded over \$800K in scholarships this year
- 10% of all blood donated in Northern NM in 2020 came from Lab

## Technology Readiness Gross Receipts Initiative (TRGR)

- Provides NM businesses opportunities to work with LANL or Sandia to advance technologies past the invention stage to market ready tech



Above: Nominations just closed for the new Community Relations medal, which honors contributions to community relations at LANL. Below: Edgar Sarceno, a LAESF scholarship winner who was temporarily homeless in high school and is now a summer intern at LANL.



# Questions